

THURSDAY, OCTOBER 22, 1885

AMERICAN ANTHROPOLOGY

Reizen en Onderzoekingen in Noord-Amerika. Van Dr. H. F. C. Ten Kate, Jun. (Leyden: Brill, 1885.)

Prehistoric America. By the Marquis de Nadaillac. Translated by N. D'Anvers. Edited by W. H. Dall. (London: Murray, 1885.)

The Lenape Stone; or, the Indian and the Mammoth. By H. C. Mercer. (New York: Putnam, 1885.)

DR. TEN KATE (son of the celebrated Dutch painter) has published the account of his late anthropological journey in the regions about Arizona and New Mexico. His exploration was supported by the Government of Holland, for whose Rijks Museum at Leyden he brought home a collection illustrating the peculiar civilisation of the Pueblo Indians and their wilder neighbours of the plains; also by several scientific bodies, among them the Anthropological Society of Paris, for which he took body-measurements of the various tribes he met with. Belonging to the school of observers who depend on the measurement of skulls as a means of classing the natives of America into stocks of the general Mongoloid race to which they primarily belong (p. 432), he has to deal with the interesting problem, what relation the ruder and fiercer tribes bear to the comparatively cultured and peaceable dwellers in the pueblos. This, however, is confused by the fact that among neither is the type uniform. Dr. Ten Kate (p. 173) recognises among the Apaches two or three varieties, one more Mongolian and especially seen among the women, the others more of the bold-featured Redskin-type. The brachycephalic and occipitally flattened skull which he considers especially characteristic of the Pueblo Indians, enables him to contradict (p. 155) the opinion that the handsome Pimas belong to these. But then he finds it necessary to divide the Pueblos into much the same Mongolian and Redskin types (see his remarks on the Moquis, p. 253). On the whole his observations do not seem incompatible with the view that the difference between the roving Indians of the skin tents and the tillers of the fields around the towns of mud-brick houses depends less on race than on difference of stage of civilisation, itself due in great measure to the respective circumstances of a wild life of war and plunder or a tame life of peace and industry. That the neighbourhood of the nations of Old Mexico may have influenced the civilisation of the Pueblo tribes is likely enough, but Dr. Ten Kate argues on grounds both of skull-measure and language (pp. 265, 221) against any identification of Zuñis or Moquis with Aztecs. Indeed, it is the general experience of anthropologists, in spite of resemblances in such matters as the step-pattern on the pottery, that the language, customs, and religion which the natives of Zuñi or Tehua have preserved since the Spanish Conquest, show original and peculiar types which are not to be accounted for as borrowed from Mexico. Thus the designs on the earthen water-vessels, when explained, prove not to be copies of Mexican ornaments, but mostly direct symbolic pictures, a spiral for the whirlwind, a semicircle with descending lines for a

rain-cloud, &c. This even affects the argument that the celebrated "cliff-dwellings" of the district were the strongholds of the ancestors of tribes such as the Moquis, who claim to continue and interpret the designs on their pottery (p. 265). Dr. Ten Kate had the good fortune of visiting Hualpé with Major Powell and seeing the Moqui snake dance (p. 242). He was allowed to go down the *estufa* to see the paraphernalia of the dancers and the vessel of drink taken as prophylactic against rattlesnake-bites, and his account of the dance itself, particularly as to the way in which the rattlesnakes are carried in the mouths of one set of dancers while another set by tickling them with feathers prevents their striking, is much in the same terms as that given by Capt. Bourke (see NATURE, vol. xxxi. p. 429). Mr. Cushing was still at the pueblo of Zuñi under his Indian name of Ténatsali or "Medicine Flower," and with his guidance Dr. Ten Kate had opportunities of studying the social life of the interesting matriarchal community. The main features of the family system are now clear, as to the young man being chosen by the young woman as "hers to be" (*yiluk'ianiha*) and his being taken by her father into the house as pupil (*talahi*); thus he passes into the position of a husband who can be sent back to his home, and the father of children who belong to their mother and inherit only from her. But in this and other accounts there are indications of what is evident to every traveller who has visited a Zuñi home—that the father after all has real power even in that matriarchal household. It is to be hoped that Mr. Cushing, when he gives the world his long-expected treatise on Zuñi language, manners, and religion, will be able to make the practical working of the matriarchal life more perfectly intelligible to the prejudiced patriarchal mind of the white man. Dr. Ten Kate inspected characteristic tribes throughout the New Mexican district, from these comparatively high Zuñis down to the low Utes, noting details of customs and other anthropological material which at times illustrate the effects of intercourse through a yet wider range of culture. Thus the wooden plough and creaking ox-cart of ancient Rome, introduced into America by the Spanish conquerors, are to be seen at work in the fields around the pueblos; and white men passing near an Indian cairn still throw each a stone upon it for luck (p. 271).

The well-known questions as to America before the time of Columbus may be counted on more than ever to arouse the interest of even the "general reader"—whether and how the natives came across from Asia, whether they made or imported the peculiar civilisations of Mexico and Peru, and so on. Thus it was quite worth while to translate the Marquis de Nadaillac's "Amérique Préhistorique," with its summaries of information and illustrations borrowed from the best sources. The work has been improved by being edited by Mr. W. H. Dall, whose own researches in the Aleutian region form one of the most interesting chapters in the anthropology of America. In the first place, the interesting though as yet hardly clear evidence is fairly given as to man's existence in America before the recent geological period. One of its most curious details is the description by Ameghino the geologist (p. 29) of his finding human remains on the banks of the Rio Frias, some twenty leagues from Buenos Ayres, associated with charcoal, potsherds, and stone arrow-

heads, near the carapaces of gigantic extinct armadillos (Glyptodon) which had served as ready-made roofs to the pits in the ground which formed the dwellings of the ancient savages of the Pampas. It seems that, though the relater was a well-known geological explorer, his account was received with such incredulity, even in the district, that the Argentine Scientific Society refused to allow a paper to be read before them. The present volume, however (p. 477), contains particulars of a further discovery of the same kind, a human skull and most part of the skeleton having been found below an inverted Glyptodon carapace. This is not indeed conclusive, on account of the frequent displacement of the Pampas soil by floods, and even were the contemporaneity of man and Glyptodon made out, the upper bed containing the remains of this huge edentate may be more recent than the quaternary date. But no doubt there will be more finds, and it may help the discussion to point out that there seems nothing improbable in a man's living under a Glyptodon shell four or five feet long, inasmuch as there is classical authority for such habitations in the Old World. The natives of Ceylon, according to Ælian, could live under their great turtle-shells as roofs; so Pliny mentions the Chelonophagi of the Persian Gulf covering their huts with the shells of turtles and living on the meat. It is to be feared that the late Dr. Lund's researches in the limestone caves of Brazil, claimed as proving that the American man was a contemporary of the extinct megatherium and horse, were not made accurately enough to be relied on now, but it is well to keep them in view to encourage similar research. On the northern continent, Dr. Abbott's rude implements of argillite trap are the most remarkable objects claimed as the work of Glacial man, and they have proper description and drawing here, while every other discovery worthy of any consideration receives it. As is usual in French works, proofs of the high geological age of man are received somewhat more readily than in our more sceptical English literature. An unusually full account is given of the shell-heaps which fringe the coasts of both Americas, sometimes fifty feet thick and more, so as even to be valuable for the supply of lime to the builders of neighbouring towns. The high age of some of these rubbish-heaps is shown by elevation of the ground having lifted them high above the sea-level where the shell-fish were doubtless cooked and eaten, while the cannibal habits of the rude savages of the shores are shown by the usual evidence of human bones split for the marrow. Probably the more recent heaps are those characterised by tobacco-pipes, and stone pestles and mortars like those in which the modern Indians bruise seeds. This seems at least a reasonable opinion notwithstanding that such stone pestles and mortars have been put forward as evidence of man inhabiting California far back in the Tertiary period. M. de Nadaillac's chapters on the mound-builders and cliff-dwellers, and the nations of Mexico and Peru, give much popular information. The original French work discussed at some length the native American legends of deluges and other catastrophes, commemorating the mythic forefathers of nations and introducers of religious laws, and arts; but the American editor, with better judgment of the historical value of these tales, has pared them down, leaving the reader to form his judgments on

more solid matters. Should a new edition of "Prehistoric America" be demanded, it will be well to have the press more carefully corrected. So well-known a living authority as Prof. Marsh figures as "March," and it is with an effort that one recognises the ancient Chinese emperor "Fo-hi" under the designation of "Fo-Fli." At p. 271, M. de Nadaillac yields to the common temptation of finding the name of the *Nahua* nation in the name of the country *Anahuac*, as if it meant "the country of the Nahuas by the water;" but this is grammatically impossible, and indeed the etymology of *A-nahuac*, meaning simply "near the water," is quite indisputable.

The interest felt by Americans in the antiquity of man on their continent is shown by the appearance of forged relics. The so-called "Lenape Stone" is one of the flat perforated stones known as gorgets, common in Indian graves, but on it is scratched a rude representation of hunters attacking a mammoth. When it was produced, Mr. Carvill Lewis at once called attention to the obvious point, that the mammoth is a palpable imitation of that of the cave of La Madeleine, whereas the hunters are imitated from the childish modern American Indian pictures on bark or deerskin. The artistic power of the men of the mammoth-period is shown by its being unconsciously conveyed through the hand of so stupid a copyist.

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PHYSIOLOGICAL PLANT ANATOMY

Physiologische Pflanzenanatomie im Grundriss dargestellt.

Von Dr. G. Haberlandt. (Leipzig: Wilhelm Engelmann, 1884.)

WHEN one recognises the immense importance of continually keeping before the student, the fact that from whatever standpoint the plant is viewed, physiological considerations must never be lost sight of, one cannot but welcome the appearance of Dr. Haberlandt's text-book on physiological plant anatomy, and one is disposed to do so with more than ordinary favour, recalling those chapters on physiological organography which appeared some three years ago in Prof. Sachs's "Vorlesungen." The subject is one to which Dr. Haberlandt has specially devoted himself, the present volume being in fact the most recent of a series of detailed publications. On this account it is not surprising to find that much of the subject-matter is not new, and that of the twelve sections into which the book is divided five have already appeared in the article in Schenk's handbook entitled "Die physiologischen Leistungen der Pflanzengewebe." Dr. Haberlandt's aim on the present occasion is to publish as complete an account as may be, of the present history of the subject, and the great point upon which he insists, is that the whole anatomical structure and the mode of arrangement of the various tissues composing the plant, are simply so many illustrations of the phenomenon of adaptation to physiological needs.

The first two sections are devoted to the consideration of the cell and the formation of tissues. The third treats of the tegumentary system, and as far as regards the epidermis special stress is laid upon Westermaier's discovery that the epidermal cells serve for the storage of water, in addition to their well-known protective function.